



SEQUENCE LISTING

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<120> Methods of Optimizing Antibody Variable Region Binding Affinity

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<140> 10/697,399

<141> 2003-10-30

<160> 50

<170> PatentIn version 3.2

<210> 1

<211> 107

<212> PRT

<213> Mus musculus

<400> 1

Asp Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Val Thr Pro Gly
1 5 10 15

Asp Arg Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asp Tyr
20 25 30

Leu His Trp Tyr Gln Gln Lys Ser His Glu Ser Pro Arg Leu Leu Ile
35 40 45

Lys Tyr Ala Ser His Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Ser Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Pro
65 70 75 80

Glu Asp Val Gly Ile Tyr Tyr Cys Gln His Gly His Ser Phe Pro Arg
85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
100 105

<210> 2

<211> 107

<212> PRT

<213> Homo sapiens

<400> 2

Glu Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
1 5 10 15

Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser Tyr
20 25 30

Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile
35 40 45

Tyr Asp Ala Ser Asn Arg Ala Thr Gly Ile Pro Ala Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu Pro
65 70 75 80

Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Ser Asn Trp Pro Leu
85 90 95

Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100 105

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<212> PRT

<213> Mus musculus

<400> 3

Gln Ile Gln Leu Val Gln Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
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Thr Val Arg Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Thr Thr
20 25 30

Gly Met Gln Trp Val Gln Glu Met Pro Gly Lys Gly Leu Lys Trp Ile
35 40 45

Gly Trp Ile Asn Thr His Ser Gly Val Pro Lys Tyr Val Glu Asp Phe
50 55 60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Asn Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Asn Leu Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
85 90 95

Val Arg Ser Gly Asn Gly Asn Tyr Asp Leu Ala Tyr Phe Ala Tyr Trp
100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ala
115 120

<210> 4
<211> 113
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<400> 4

Gln Val Gln Leu Val Gln Ser Gly Ser Glu Leu Lys Lys Pro Gly Ala
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30

Ala Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Asn Thr Gly Asn Pro Thr Tyr Ala Gln Gly Phe
50 55 60

Thr Gly Arg Phe Val Phe Ser Leu Asp Thr Ser Val Ser Thr Ala Tyr
65 70 75 80

Leu Gln Ile Ser Ser Leu Lys Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Tyr Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
100 105 110

Ser

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<400> 5

Val Gln Leu Leu Glu Ser Gly Pro Gly Leu Val Ala Pro Ser Gln Ser
1 5 10 15

Leu Ser Ile Thr Cys Thr Val Ser Gly Phe Ser Leu Thr Asp Tyr Gly
20 25 30

Val Asp Trp Val Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Leu Gly
35 40 45

Met Ile Trp Gly Asp Gly Ser Thr Asp Tyr Asn Ser Ala Leu Lys Ser
50 55 60

Arg Leu Ser Ile Thr Lys Asp Asn Ser Lys Ser Gln Val Phe Leu Lys
65 70 75 80

Met Asn Ser Leu Gln Thr Asp Asp Thr Ala Arg Tyr Tyr Cys Val Arg
85 90 95

Asp Pro Ala Asp Tyr Gly Asn Tyr Asp Tyr Ala Leu Asp Tyr Trp Gly
100 105 110

Gln Gly Thr Ser Val Thr Val Ser
115 120

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<213> Mus musculus

<400> 6

Ser Ser Leu Ser Ala Ser Leu Gly Asp Arg Val Thr Ile Ser Cys Ser
1 5 10 15

Ala Ser Gln Asp Ile Asn Lys Tyr Leu Asn Trp Tyr Gln Gln Lys Pro
20 25 30

Asp Gly Ala Val Lys Leu Leu Ile Phe Tyr Thr Ser Ser Leu His Ser
35 40 45

Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr Ser
50 55 60

Leu Thr Ile Ser Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
65 70 75 80

Gln Gln Tyr Glu Lys Leu Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu
85 90 95

Glu Val Lys

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 <213> Homo sapiens

<400> 7

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Trp Val Arg Gln Ala Pro Gly
 20 25 30

Lys Gly Leu Glu Trp Val Gly Arg Phe Thr Ile Ser Arg Asp Asp Ser
 35 40 45

Lys Asn Ser Leu Tyr Leu Gln Met Asn Ser Leu Lys Thr Glu Asp Thr
 50 55 60

Ala Val Tyr Tyr Cys Ala Arg Trp Gly Gln Gly Thr Thr Val Thr Val
 65 70 75 80

Ser

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 <213> Homo sapiens

<400> 8

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Trp Tyr Gln Gln Lys Pro Gly Lys Ala
 20 25 30

Pro Lys Leu Leu Ile Tyr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly
 35 40 45

Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp
 50 55 60

Phe Ala Thr Tyr Tyr Cys Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 65 70 75 80

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<220>
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<400> 9

Ser Ala Ser Gln Asp Ile Asn Asp Tyr Leu Asn
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<212> PRT
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<400> 10

Ala Gly Thr Gly Cys Ala Ala Gly Thr Cys Ala Gly Gly Ala Cys Ala
1 5 10 15

Thr Thr Ala Ala Cys Gly Ala Cys Thr Ala Thr Thr Thr Ala Ala Ala
20 25 30

Cys

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<400> 11

Gly Thr Ser Ser Leu His Ser
1 5

<210> 12
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<400> 12

Gly Gly Cys Ala Cys Ala Thr Cys Ala Ala Gly Thr Thr Thr Ala Cys
1 5 10 15

Ala Cys Thr Cys Ala
20

<210> 13

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<400> 13

Asn Thr Ser Ser Leu His Ser
1 5

<210> 14

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<400> 14

Ala Ala Cys Ala Cys Ala Thr Cys Ala Ala Gly Thr Thr Thr Ala Cys
1 5 10 15

Ala Cys Thr Cys Ala
20

<210> 15

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<400> 15

Tyr Thr Ser Val Leu His Ser
1 5

<210> 16
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<400> 16

Thr Ala Cys Ala Cys Ala Thr Cys Ala Gly Thr Thr Thr Thr Ala Cys
1 5 10 15

Ala Cys Thr Cys Ala
20

<210> 17
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<400> 17

Asn Thr Ser Val Leu His Ser
1 5

<210> 18
<211> 21
<212> PRT
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<400> 18

Ala Ala Cys Ala Cys Ala Thr Cys Ala Gly Thr Thr Thr Thr Ala Cys
1 5 10 15

Ala Cys Thr Cys Ala
20

<210> 19
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<400> 19

Tyr Thr Ser Ser Leu His Val
1 5

<210> 20
<211> 21
<212> PRT
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<400> 20

Thr Ala Cys Ala Cys Ala Thr Cys Ala Ala Gly Thr Thr Thr Ala Cys
1 5 10 15

Ala Cys Gly Thr Gly
20

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<220>
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<400> 21

Asn Thr Ser Ser Leu His Val
1 5

<210> 22
<211> 21
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<400> 22

Ala Ala Cys Ala Cys Ala Thr Cys Ala Ala Gly Thr Thr Thr Ala Cys
1 5 10 15

Ala Cys Gly Thr Ala
20

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<400> 23

Gln Gln Tyr Glu Asp Leu Pro Trp Thr
1 5

<210> 24

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<400> 24

Cys Ala Gly Cys Ala Gly Thr Ala Thr Gly Ala Ala Gly Ala Thr Cys
1 5 10 15

Thr Thr Cys Cys Gly Thr Gly Gly Ala Cys Gly
20 25

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Gly Phe Ser Leu Gly Asp Tyr Gly Val Asp
1 5 10

<210> 26

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<212> PRT

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<400> 26

Gly Gly Ala Thr Thr Cys Thr Cys Ala Thr Thr Ala Gly Gly Cys Gly
1 5 10 15

Ala Cys Thr Ala Thr Gly Gly Thr Gly Thr Ala Gly Ala Cys
20 25 30

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<400> 27

Met Ile Trp Pro Asp Gly Ser Thr
1 5

<210> 28
<211> 24
<212> PRT
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<400> 28

Ala Thr Gly Ala Thr Ala Thr Gly Gly Cys Cys Gly Gly Ala Thr Gly
1 5 10 15

Gly Ala Ala Gly Cys Ala Cys Ala
20

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<220>
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<400> 29

Met Ile Trp Gln Asp Gly Ser Thr
1 5

<210> 30
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<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic

<400> 30

Ala Thr Gly Ala Thr Ala Thr Gly Gly Cys Ala Gly Gly Ala Thr Gly
1 5 10 15

Gly Ala Ala Gly Cys Ala Cys Ala
20

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<400> 31

Met Ile Trp Gly Asp Gly Ser Val
1 5

<210> 32
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<220>
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<400> 32

Ala Thr Gly Ala Thr Ala Thr Gly Gly Gly Gly Thr Gly Ala Thr Gly
1 5 10 15

Gly Ala Ala Gly Cys Gly Thr Ala
20

<210> 33
<211> 8
<212> PRT
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<220>
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<400> 33

Asp Ile Asn Ser Ala Leu Lys Ser
1 5

<210> 34
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<400> 34

Gly Ala Cys Ala Thr Thr Ala Ala Thr Thr Cys Ala Gly Cys Thr Cys
1 5 10 15

Thr Cys Ala Ala Gly Thr Cys Cys
20

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<400> 35

Asp Tyr Asn Ser Ala Leu Ala Ser
1 5

<210> 36

<211> 24

<212> PRT

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<400> 36

Gly Ala Cys Thr Ala Thr Ala Ala Thr Thr Cys Ala Gly Cys Thr Cys
1 5 10 15

Thr Cys Gly Cys Ala Thr Cys Cys
20

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<400> 37

Asp Tyr Asn Ser Ala Leu Gln Ser
1 5

<210> 38
<211> 24
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<213> Artificial Sequence

<220>
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<400> 38

Gly Ala Cys Thr Ala Thr Ala Ala Thr Thr Cys Ala Gly Cys Thr Cys
1 5 10 15

Thr Cys Cys Ala Ala Thr Cys Cys
20

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<400> 39

Asp Val Asn Ser Ala Leu Gln Ser
1 5

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<400> 40

Gly Ala Cys Gly Thr Thr Ala Ala Thr Thr Cys Ala Gly Cys Thr Cys
1 5 10 15

Thr Cys Cys Ala Gly Thr Cys Cys
20

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<400> 41

Asp Val Asn Ser Ala Leu Lys Ser
1 5

<210> 42
<211> 24
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<400> 42

Gly Ala Cys Gly Thr Thr Ala Ala Thr Thr Cys Ala Gly Cys Thr Cys
1 5 10 15

Thr Cys Ala Ala Gly Thr Cys Cys
20

<210> 43
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
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<400> 43

Asp Pro Ala Asp Tyr Gly Asn Tyr Asn Tyr Ala Leu Asp Tyr
1 5 10

<210> 44
<211> 42
<212> PRT
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<220>
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<400> 44

Gly Ala Cys Cys Cys Ala Gly Cys Cys Gly Ala Cys Thr Ala Thr Gly
1 5 10 15

Gly Thr Ala Ala Cys Thr Ala Cys Ala Ala Thr Thr Ala Thr Gly Cys
20 25 30

Thr Thr Thr Gly Gly Ala Cys Thr Ala Cys
35 40

<210> 45
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<400> 45

Asp Trp Ala Asp Tyr Gly Asn Tyr Asn Tyr Ala Leu Asp Tyr
1 5 10

<210> 46

<211> 42

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<220>

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<400> 46

Gly Ala Cys Thr Gly Gly Gly Cys Cys Gly Ala Cys Thr Ala Thr Gly
1 5 10 15

Gly Thr Ala Ala Cys Thr Ala Cys Ala Ala Thr Thr Ala Thr Gly Cys
20 25 30

Thr Thr Thr Gly Gly Ala Cys Thr Ala Cys
35 40

<210> 47

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<400> 47

Asp Pro Ala Asp Tyr Gly Asn Tyr Asp Tyr Lys Leu Asp Tyr
1 5 10

<210> 48

<211> 42

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic

<400> 48

Gly Ala Cys Cys Cys Ala Gly Cys Cys Gly Ala Cys Thr Ala Thr Gly
1 5 10 15

Gly Thr Ala Ala Cys Thr Ala Cys Gly Ala Thr Thr Ala Thr Ala Ala
20 25 30

Ala Thr Thr Gly Gly Ala Cys Thr Ala Cys
35 40

<210> 49
<211> 14
<212> PRT
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<220>
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<400> 49

Asp Trp Ala Asp Tyr Gly Asn Tyr Asp Tyr Ala Leu Asp Tyr
1 5 10

<210> 50
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<212> PRT
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<220>
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<400> 50

Gly Ala Cys Thr Gly Gly Gly Cys Cys Gly Ala Cys Thr Ala Thr Gly
1 5 10 15

Gly Thr Ala Ala Cys Thr Ala Cys Gly Ala Cys Thr Ala Thr Gly Cys
20 25 30

Thr Thr Thr Gly Gly Ala Cys Thr Ala Cys
35 40